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MAIL STOP: APPEAL BRIEF PATENTS

By:

Date: December 8, 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

Applic. No. : 10/089,705 Confirmation No.: 2723
Inventor : Karlheinz Beyrich et al.
Filed : June 3, 2002
Title : Apparatus for Transferring Membranes to a
Continuously Operable Sealing Carrousel
for the Heat Sealing of Can-Like
Packaging Materials
TC/A.U. : 3721
Examiner : Christopher R. Harmon
Customer No. : 24131

Hon. Commissioner for Patents
Alexandria, VA 22313-1450

BRIEF ON APPEAL

S i r :

This is an appeal from the final rejection in the Office
action dated April 5, 2004, finally rejecting claims 1-11.

Appellants submit this *Brief on Appeal* in triplicate,
including payment in the amount of \$170.00 to cover the fee
for filing the *Brief on Appeal*.

12/13/2004 SSITHIB1 00000031-10089705

01-FC:1999

170.00 DP

12/13/2004 SSITHIB1 00000037 10089705

01 FC:1999

170.00 DP

Real Party in Interest:

This application is assigned to Gebrüder Leonhardt GmbH & Co. KG Blema Kircheis of Aue, Germany. The assignment will be submitted for recordation upon the termination of this appeal.

Related Appeals and Interferences:

No related appeals or interference proceedings are currently pending which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

Status of Claims:

Claims 1-11 are rejected and are under appeal. No claims were cancelled.

Status of Amendments:

No claims were amended after the final Office action. A Notice of Appeal was filed on October 8, 2004. No Advisory Action has been received yet.

Summary of the Claimed Subject Matter:

As stated in the first paragraph on page 1 of the specification of the instant application, the invention relates to an apparatus for transferring membranes to a continuously operable sealing carrousel for the heat sealing

of can-like packaging materials, a rotatable transfer station being arranged upstream of the sealing carousel.

Appellants explained on page 7 of the specification, line 16, that the apparatus for transferring membranes 13 (figure 3) to a continuously operable sealing carousel 15 for the heat sealing of can-like packaging materials is represented in basic illustrations in plan view according to figures 1 and 2. Figure 1 shows the apparatus, the membrane star 10, in one of the resting phases, and figure 2 shows it in the movement phase. A double cutting tool 11 is, in principle, arranged above the membrane star 10, which circulates cyclically according to the invention.

Appellants further explained on page 7 of the specification, line 27, that this double cutting tool 11, which is indicated as a transversely depicted rectangle, is assigned a membrane strip 12, which can be fed cyclically to the double cutting tool 11 via a membrane-strip unwinding unit (not illustrated). The membrane star 10 has vacuum stations 17 (see figure 4), from 1 to 8, it being the case that, in the basic illustrations according to figures 1 and 2, it is only the course taken by the centers of the individual vacuum stations 1 to 8 which is illustrated in each case on the membrane star 10. Furthermore, the sealing carousel 15 is depicted in the

center. In this case, the individual vacuum stations 20 of the sealing heads 18 (see figure 5) are designated by the numbers 1' to 8', it also being the case here that it is the course taken by the centers of the vacuum stations 20, in this case moveable over a circular line, which is illustrated. Represented to the right of the sealing carrousel 15 is a transfer star 22 for cardboard cans with transfer stations 1" to 5", and represented to the left of the sealing carrousel 15 is a receiving star 23 with the receiving stations 1" to 5".

As set forth on page 8 of the specification, line 12, Figure 3 shows a plan view of the membrane strip in the cut state. It can be seen from figure 3 that in each case two membranes 13 are cut out of the membrane strip 12, from the positions designated x, by the double cutting tool 11. As a result of being divided up in this way, the membrane strip 12 is utilized to the optimum extent.

It is also stated on page 8 of the specification, line 19, that, according to figure 1, in the resting phase, the membrane star 10 has its vacuum stations 7 and 8 located precisely beneath the membranes 13 designated x.

As further outlined on page 8 of the specification, line 24, Figure 4 shows a plan view of a detail of an illustration,

partly in section, of the membrane star 10 and sealing carrousel 15 in the membrane-transfer region 24 according to figure 2, during membrane transfer 13 from the vacuum station 17/3 of the membrane star 10 to the vacuum station 20/3' of the sealing head 18 (figure 5). A detail of part of the sealing carrousel 15 with the vacuum stations 20/2', 20/3' and 20/4' is shown on the left-hand side.

It is described in the last paragraph on page 8 of the specification, line 33, that the vacuum station 20/2' is located upstream of membrane transfer, the membrane transfer takes place in the central vacuum station 20/3', and the vacuum station 20/4' has already received the membrane 13 (not visible).

Appellants outlined on page 9 of the specification, line 1, that four vacuum stations 17/2, 17/3, 17/4 and 17/5 in the membrane-transfer section are shown in detail form on the membrane star 10, the membrane transfer taking place in the vacuum station 17/3. Whereas, accordingly, the vacuum station 17/2 is still occupied by a membrane 13 which is to be fed, the vacuum station 17/4 has already transferred to the vacuum station of the sealing head 20/4' the membrane 13 previously positioned on it. The directions of rotation of the sealing carrousel 15 and membrane star 10 are indicated by arrow

symbols - as is also the case in figures 1 and 2.

Appellants further outlined on page 9 of the specification, line 14, that figure 5 shows, in a sectional illustration B-B according to figure 4, the situation when the sealing head 18 of the sealing carrousel 15 receives a membrane from the membrane star 10.

It is also stated on page 9 of the specification, line 18, that, shown on the left, as in figure 4, is the sealing carrousel 15 and, on the right, the membrane star 10, each in detail form. Also depicted in figure 5 are the vacuum station 17/3 of the membrane star 10 and the vacuum station 20/3' of the sealing head 18 with the sealing ring 21.

Appellants described in the last paragraph on page 9 of the specification, line 24, that a membrane 13 is located between the two vacuum stations of the membrane star 10 and sealing head 18. The vacuum station 20/3' is illustrated in a state in which it has been lowered downward from the sealing ring 21, into a collecting position in relation to the vacuum station 17/3 of the membrane star 10, and it receives a membrane 13 from the membrane star 10, i.e. from the vacuum station 17/3 there. Specifically for the purpose of receiving a membrane, it is necessary to have a synchronized-running

section between the membrane star 10 and the sealing carrousel 15, the respective vacuum station 17 of the membrane star 10, at this location of transfer to the sealing carrousel 15, being returned by an entry curve 19 to the membrane star 10. The different speeds between the membrane star 10 and sealing carrousel 15 are equalized by the step-by-step motion linkage (not illustrated) at the moment the membrane is transferred/received.

As set forth on page 10 of the specification, line 4, the vacuum applied at the vacuum station 17/3 of the membrane star 10 is switched off whenever the vacuum station of the sealing head, in this case 20/3', has assumed its position directly diametrically opposite. Since the membrane star 10 is moved cyclically, each vacuum station 17 of the membrane star 10 which passes into the transfer region of the sealing carrousel 15 will, accordingly, move, via an accelerating section 16, into synchronized running with the sealing carrousel 15, as the membrane is received, and will move out of the membrane-transfer region via a decelerating section 16 (figure 1).

As described in the second paragraph on page 10 of the specification, line 16, according to figure 2, the transfer/synchronized running region is designated as the transfer region by 24.

Appellants also stated on page 10 of the specification, line 20, that, while the membrane star 10 is thus basically operated cyclically, by a step-by-step motion linkage (not illustrated) executing the above-described movements in the transfer regions to the sealing carrousel 15, in every second standstill position in each case two membranes 13 are cut out of the membrane strip 12, and positioned on the membrane star 10, via the double cutting tool 11.

It is stated in the last paragraph on page 10 of the specification, line 29, that this provides an apparatus which serves a continuously operated sealing carrousel 15 for the heat sealing of can-like packaging materials, having a rotatable transfer station, which allows a throughput speed of sealable packaging materials in the sealing carrousel which is considerably higher than in the prior art, and which basically involves no problems relating to separating thin membranes/insert parts, since a storage station in the form of membranes stored one above the other is dispensed with.

Appellants explained on page 11 of the specification, line 2, that the operations of the membrane star receiving cut-out membranes from the membrane strip and of membrane being transferred from the membrane star to the sealing tool of the

sealing carrousel can both be carried out with a high degree of reliability.

References Cited:

4,719,739	Foldesi	January 19, 1988
4,682,463	Foldesi	July 28, 1987

Grounds of Rejection to be Reviewed on Appeal:

1. Whether or not claims 1-4 and 8-11 are anticipated by Foldesi (U.S. Patent No. 4,719,739) under 35 U.S.C. §102(b).
2. Whether or not claims 5-7 are obvious over Foldesi (U.S. Patent No. 4,719,739) in view of Foldesi (U.S. Patent No. 4,682,463) (hereinafter "'463") under 35 U.S.C. §103.

Grouping of Claims:

Claims 1 and 10 are independent. Claims 2-9 depend on claim 1 and claim 11 depends on claim 10. The patentability of claims 2-9 and 11 are not separately argued. Therefore, claims 2-9 stand or fall with claim 1 and claim 11 stands or falls with claim 10.

Argument:

Claims 1 and 10 are not anticipated by Foldesi under 35 U.S.C.

§102:

The Foldesi reference discloses a stop or standstill period of the vacuum head (80) at the foil supply and die set disk supply assembly (132), which is accomplished by means of the of a shaped dwell lobe (72) and dwell recess (74). Foldesi discloses in claim 1 that "supply means for supplying said flexible foil sealing disks to a supply point; dwell means for causing each said vacuum head to dwell momentarily at said supply point". Foldesi discloses in claim 11 that "continuous motion in-line sealer of claim 10, wherein said dwell means is a dwell lobe and an adjacent dwell recess on said lobed cam plate". Foldesi discloses that it is necessary for the continuously moving vacuum head (80) to dwell for a moment above the uppermost sealing disk (26) at supply point (14) so that the disk (26) will be properly centered on central vacuum plate (100). This is accomplished by the dwell lobe (72) and dwell recess (74) portions of lower lobed cam plate (68).

Claim 1 calls for *inter alia*:

a rotatable transfer station being disposed upstream of the sealing carrousel, the transfer station being constructed as a cyclically drivable membrane star.

Claim 1 also calls for *inter alia*:

effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star.

The Examiner's comments in item 2 on page 2 of the Office action that, "the membranes 26 are transferred to the membrane star during a dwell or resting period and then advanced to the sealing carrousel 48 during a movement phase of the star wheel" is not correct. The membranes (26) are advanced to a vacuum head (80) during a dwell of the vacuum head (80). The membranes are then placed from the vacuum head directly onto unsealed containers (20). The membranes (26) are never transferred to the sealer star wheel (48). Accordingly, the Examiner's statement that "the membranes 26 are transferred to the membrane star during a dwell or resting period and then advanced to the sealing carrousel 48 during a movement phase of the star wheel" is not correct. It is therefore respectfully submitted that the Examiner's comments regarding

the transfer of the membrane (26) to the star wheel during a movement phase of the star wheel be disregarded.

The reference does not show a rotatable transfer station being disposed upstream of the sealing carrousel, the transfer station being constructed as a cyclically drivable membrane star, as recited in claims 1 and 10 of the instant application. The Foldesi reference discloses that each vacuum head is disposed directly above a corresponding pocket in the sealer star wheel. The vacuum head accepts a membrane that is either in a stack or that is cut from a web. The vacuum head disposes the membrane directly on an unsealed container. Therefore, Foldesi does not disclose a drivable membrane star disposed upstream of a sealing carrousel. This is contrary to the invention of the instant application as claimed, in which a rotatable transfer station is disposed upstream of the sealing carrousel, the transfer station is constructed as a cyclically drivable membrane star.

Even though the Foldesi reference does not disclose a membrane star disposed upstream of the sealing carrousel the following arguments regarding the transfer of membranes to the vacuum heads during a dwell period is given.

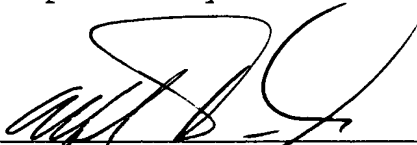
The reference does not show effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star, as recited in claims 1 and 10 of the instant application. The Foldesi reference discloses it is necessary for the continuously moving vacuum head (80) to dwell for a moment above the uppermost sealing disk (26) at supply point (14) so that the disk (26) will be properly centered on central vacuum plate (100). Therefore, Foldesi does not disclose effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star. This is contrary to the invention of the instant application as claimed, which recites effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star.

Since claims 1 and 10 are believed to be allowable over Foldesi, dependent claims 2-4, 8, 9, and 11 are believed to be allowable over Foldesi as well.

The '463 reference does not make up for the deficiencies of Foldesi. Since claim 1 is believed to be allowable, dependent claims 5-7 are believed to be allowable as well.

Based on the above-given arguments, the honorable Board is therefore respectfully urged to reverse the final rejection of the Primary Examiner.

Respectfully submitted,



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Appendix - Appealed Claims:

1. An apparatus for transferring membranes to a continuously operable sealing carrousel for the heat sealing of can-like packaging materials, comprising a rotatable transfer station being disposed upstream of the sealing carrousel, the transfer station being constructed as a cyclically drivable membrane star, and a cutting tool for membrane-strip processing being disposed above the membrane star for effecting transfer of cut-out membranes from the membrane strip to the membrane star during resting phases of the membrane star and for effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star.
2. The apparatus as claimed in claim 1, further comprising a number of vacuum stations disposed on the membrane star.
3. The apparatus as claimed in claim 2, wherein the individual vacuum stations on the membrane star are constructed such that, where the membranes are transferred to/received by the respective sealing head, the stations can be returned via an entry curve.

4. The apparatus as claimed in claim 1, wherein the membrane-strip feed to the cutting tool is disposed laterally above the membrane star.

5. The apparatus as claimed in claim 1, wherein the membrane-strip feed to the cutting tool is disposed at a feed angle of approximately 30 degrees.

6. The apparatus as claimed in claim 1, wherein during each resting phase of the membrane star, in each case two membranes can be transferred from the membrane strip, by way of a double cutting tool, to the membrane star.

7. The apparatus as claimed in claim 6, further comprising ejectors for the cut-out membranes integrated in each case in the cutting punches of the double cutting tool.

8. The apparatus as claimed in claim 1, further comprising a vacuum station in the form of a collector/ejector integrated within each sealing head on the sealing carrousel.

9. The apparatus as claimed in claim 1, wherein the membrane star is constructed such that it can be driven by a step-by-step motion linkage.

10. A method for transferring membranes to a continuously operable sealing carrousel for heat sealing of can-like packaging materials, the method which comprises:

placing a rotatable transfer station constructed as a cyclically drivable membrane star upstream of the sealing carrousel;

placing a cutting tool above the membrane star and cutting membranes from membrane-strip with the cutting tool;

transferring cut-out membranes from the membrane strip to the membrane star during resting phases of the membrane star; and

advancing the cut-out membranes to the sealing carrousel during movement phases of the membrane star.

11. The method according to claim 10, which further comprises disposing a number of vacuum stations on the membrane star.

Real Party in Interest:

This application is assigned to Gebrüder Leonhardt GmbH & Co. KG Blema Kircheis of Aue, Germany. The assignment will be submitted for recordation upon the termination of this appeal.

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It is also stated on page 8 of the specification, line 19, that, according to figure 1, in the resting phase, the membrane star 10 has its vacuum stations 7 and 8 located precisely beneath the membranes 13 designated x.

As further outlined on page 8 of the specification, line 24, Figure 4 shows a plan view of a detail of an illustration,

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It is described in the last paragraph on page 8 of the specification, line 33, that the vacuum station 20/2' is located upstream of membrane transfer, the membrane transfer takes place in the central vacuum station 20/3', and the vacuum station 20/4' has already received the membrane 13 (not visible).

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section between the membrane star 10 and the sealing carrousel 15, the respective vacuum station 17 of the membrane star 10, at this location of transfer to the sealing carrousel 15, being returned by an entry curve 19 to the membrane star 10. The different speeds between the membrane star 10 and sealing carrousel 15 are equalized by the step-by-step motion linkage (not illustrated) at the moment the membrane is transferred/received.

As set forth on page 10 of the specification, line 4, the vacuum applied at the vacuum station 17/3 of the membrane star 10 is switched off whenever the vacuum station of the sealing head, in this case 20/3', has assumed its position directly diametrically opposite. Since the membrane star 10 is moved cyclically, each vacuum station 17 of the membrane star 10 which passes into the transfer region of the sealing carrousel 15 will, accordingly, move, via an accelerating section 16, into synchronized running with the sealing carrousel 15, as the membrane is received, and will move out of the membrane-transfer region via a decelerating section 16 (figure 1).

As described in the second paragraph on page 10 of the specification, line 16, according to figure 2, the transfer/synchronized running region is designated as the transfer region by 24.

Appellants also stated on page 10 of the specification, line 20, that, while the membrane star 10 is thus basically operated cyclically, by a step-by-step motion linkage (not illustrated) executing the above-described movements in the transfer regions to the sealing carrousel 15, in every second standstill position in each case two membranes 13 are cut out of the membrane strip 12, and positioned on the membrane star 10, via the double cutting tool 11.

It is stated in the last paragraph on page 10 of the specification, line 29, that this provides an apparatus which serves a continuously operated sealing carrousel 15 for the heat sealing of can-like packaging materials, having a rotatable transfer station, which allows a throughput speed of sealable packaging materials in the sealing carrousel which is considerably higher than in the prior art, and which basically involves no problems relating to separating thin membranes/insert parts, since a storage station in the form of membranes stored one above the other is dispensed with.

Appellants explained on page 11 of the specification, line 2, that the operations of the membrane star receiving cut-out membranes from the membrane strip and of membrane being transferred from the membrane star to the sealing tool of the

sealing carrousel can both be carried out with a high degree of reliability.

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Grouping of Claims:

Claims 1 and 10 are independent. Claims 2-9 depend on claim 1 and claim 11 depends on claim 10. The patentability of claims 2-9 and 11 are not separately argued. Therefore, claims 2-9 stand or fall with claim 1 and claim 11 stands or falls with claim 10.

Argument:

Claims 1 and 10 are not anticipated by Foldesi under 35 U.S.C.

§102:

The Foldesi reference discloses a stop or standstill period of the vacuum head (80) at the foil supply and die set disk supply assembly (132), which is accomplished by means of the of a shaped dwell lobe (72) and dwell recess (74). Foldesi discloses in claim 1 that "supply means for supplying said flexible foil sealing disks to a supply point; dwell means for causing each said vacuum head to dwell momentarily at said supply point". Foldesi discloses in claim 11 that "continuous motion in-line sealer of claim 10, wherein said dwell means is a dwell lobe and an adjacent dwell recess on said lobed cam plate". Foldesi discloses that it is necessary for the continuously moving vacuum head (80) to dwell for a moment above the uppermost sealing disk (26) at supply point (14) so that the disk (26) will be properly centered on central vacuum plate (100). This is accomplished by the dwell lobe (72) and dwell recess (74) portions of lower lobed cam plate (68).

Claim 1 calls for *inter alia*:

a rotatable transfer station being disposed upstream of the sealing carrousel, the transfer station being constructed as a cyclically drivable membrane star.

Claim 1 also calls for *inter alia*:

effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star.

The Examiner's comments in item 2 on page 2 of the Office action that, "the membranes 26 are transferred to the membrane star during a dwell or resting period and then advanced to the sealing carrousel 48 during a movement phase of the star wheel" is not correct. The membranes (26) are advanced to a vacuum head (80) during a dwell of the vacuum head (80). The membranes are then placed from the vacuum head directly onto unsealed containers (20). The membranes (26) are never transferred to the sealer star wheel (48). Accordingly, the Examiner's statement that "the membranes 26 are transferred to the membrane star during a dwell or resting period and then advanced to the sealing carrousel 48 during a movement phase of the star wheel" is not correct. It is therefore respectfully submitted that the Examiner's comments regarding

the transfer of the membrane (26) to the star wheel during a movement phase of the star wheel be disregarded.

The reference does not show a rotatable transfer station being disposed upstream of the sealing carrousel, the transfer station being constructed as a cyclically drivable membrane star, as recited in claims 1 and 10 of the instant application. The Foldesi reference discloses that each vacuum head is disposed directly above a corresponding pocket in the sealer star wheel. The vacuum head accepts a membrane that is either in a stack or that is cut from a web. The vacuum head disposes the membrane directly on an unsealed container. Therefore, Foldesi does not disclose a drivable membrane star disposed upstream of a sealing carrousel. This is contrary to the invention of the instant application as claimed, in which a rotatable transfer station is disposed upstream of the sealing carrousel, the transfer station is constructed as a cyclically drivable membrane star.

Even though the Foldesi reference does not disclose a membrane star disposed upstream of the sealing carrousel the following arguments regarding the transfer of membranes to the vacuum heads during a dwell period is given.


The reference does not show effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star, as recited in claims 1 and 10 of the instant application. The Foldesi reference discloses it is necessary for the continuously moving vacuum head (80) to dwell for a moment above the uppermost sealing disk (26) at supply point (14) so that the disk (26) will be properly centered on central vacuum plate (100). Therefore, Foldesi does not disclose effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star. This is contrary to the invention of the instant application as claimed, which recites effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star.

Since claims 1 and 10 are believed to be allowable over Foldesi, dependent claims 2-4, 8, 9, and 11 are believed to be allowable over Foldesi as well.

The '463 reference does not make up for the deficiencies of Foldesi. Since claim 1 is believed to be allowable, dependent claims 5-7 are believed to be allowable as well.

Based on the above-given arguments, the honorable Board is
therefore respectfully urged to reverse the final rejection of
the Primary Examiner.

Respectfully submitted,



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Appendix - Appealed Claims:

1. An apparatus for transferring membranes to a continuously operable sealing carrousel for the heat sealing of can-like packaging materials, comprising a rotatable transfer station being disposed upstream of the sealing carrousel, the transfer station being constructed as a cyclically drivable membrane star, and a cutting tool for membrane-strip processing being disposed above the membrane star for effecting transfer of cut-out membranes from the membrane strip to the membrane star during resting phases of the membrane star and for effecting advancement of membranes positioned on the membrane star to the sealing carrousel during movement phases of the membrane star.
2. The apparatus as claimed in claim 1, further comprising a number of vacuum stations disposed on the membrane star.
3. The apparatus as claimed in claim 2, wherein the individual vacuum stations on the membrane star are constructed such that, where the membranes are transferred to/received by the respective sealing head, the stations can be returned via an entry curve.

4. The apparatus as claimed in claim 1, wherein the membrane-strip feed to the cutting tool is disposed laterally above the membrane star.

5. The apparatus as claimed in claim 1, wherein the membrane-strip feed to the cutting tool is disposed at a feed angle of approximately 30 degrees.

6. The apparatus as claimed in claim 1, wherein during each resting phase of the membrane star, in each case two membranes can be transferred from the membrane strip, by way of a double cutting tool, to the membrane star.

7. The apparatus as claimed in claim 6, further comprising ejectors for the cut-out membranes integrated in each case in the cutting punches of the double cutting tool.

8. The apparatus as claimed in claim 1, further comprising a vacuum station in the form of a collector/ejector integrated within each sealing head on the sealing carrousel.

9. The apparatus as claimed in claim 1, wherein the membrane star is constructed such that it can be driven by a step-by-step motion linkage.

10. A method for transferring membranes to a continuously operable sealing carrousel for heat sealing of can-like packaging materials, the method which comprises:

placing a rotatable transfer station constructed as a cyclically drivable membrane star upstream of the sealing carrousel;

placing a cutting tool above the membrane star and cutting membranes from membrane-strip with the cutting tool;

transferring cut-out membranes from the membrane strip to the membrane star during resting phases of the membrane star; and

advancing the cut-out membranes to the sealing carrousel during movement phases of the membrane star.

11. The method according to claim 10, which further comprises disposing a number of vacuum stations on the membrane star.